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ABSTRACT

This paper draws on chaos theory to examine the potential of change within a living community. It focuses on secondary-school change in order to consider the divergent paths and the unexpected cultural adaptations that emerged when a Canadian school district required its secondary schools to revise their organizational models. Department heads were replaced by facilitators, and schools were encouraged to develop site-based models that were program based. To record the nature of the changes, annual survey data were collected beginning in 1995. It became quickly apparent that no grand plan for change was in place, although it was assumed that the school-restructuring teams would create the best possible organizational structures for their schools. Reformers discovered that, because past structures were deeply embedded in the secondary school cultures, restructuring would require a reculturing of stakeholders. Effective change arose when participants supported constantly evolving and emerging organizational values, involved stakeholders in making the decisions in a collaborative manner, and rethought the functions of the organizations more in terms of processes as opposed to isolated tasks. The metaphor of a living organization proved important in grasping the program's development because it emphasized the need of continual organizational learning and the importance of collaborative interaction. (Contains 21 references.) (RJM)

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Building Change Capacity Within Secondary Schools Through Goal-Driven and Living Organizations

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Building change capacity within secondary schools through goal-driven and living organizations[1]

In the early 1990s, in a meeting room full of tired and frustrated school district and teacher union contract negotiators, a small but colourful butterfly rose and flapped its wings. This butterfly represented a seemingly simple notion to restructure secondary schools in one Ontario school district because government policy towards increased subject integration made it difficult to assign department head allotments based on the collective agreement. The seemingly simple movement of this small but colourful butterfly began a process of restructuring and reculturing in all secondary schools in that school district and has resulted in very different secondary school organizations in each of the secondary schools. It is doubtful that anyone involved in these contract negotiations understood the degree of change they initiated.

In 1994, we began working with and studying the efforts of the secondary schools and the district and we have learned a great deal about the restructuring and reculturing process as it unfolded. Obviously both the longitudinal study and the processes in the schools and school district are extremely complex. Consequently, we limit the focus of this paper to investigating the change capacity in terms to the work of those scholars studying chaos theory (Caine & Caine, 1997; Daft, 1998; Garmston & Wellman, 1995; Goff, 1998; Gunter, 1995; Morgan, 1997; Morrison, 1998; Wheatley, 1992) and de Geus' (1997) conception of a living company (modified here to living organization). We first explore the notions of chaos theory and a living organization before describing the research methods and then report the findings in terms of the conceptual framework.

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[1]This research program was funded by grants from the Social Sciences and Humanities Research Council and the Ontario Ministry of Education and Training with support from the Kawartha Pine Ridge District School Board and District #49 Ontario Secondary School Teachers' Federation.

Conceptual Framework

Schön (1982) describes reflective inquiry and change as a swamp where it is difficult to find the hard ground on which to proceed. The swamp image mimics the seemingly helter-skelter and rapid-fire change environment currently experienced by schools. Certainly, this environment has resulted in a disenchantment with the perception that the future can be identified, planned for, and controlled through such venues as strategic planning (Gunter, 1995). Further, we have known for a long time that the rational models of school change fail to represent the complexity that is deeply embedded in school change (Fullan, 1999). Rather, some scholars are representing change as a chaotic process and suggest that chaos theory, borrowed from quantum physics, provides a means of understanding but not controlling the randomness involved in significant change.

For instance, Daft (1998) suggests that chaos theory acknowledges that the world is full of randomness, uncertainty, surprise, rapid change, and confusion. Caine and Caine (1997) concur and suggest that organizations exist on the edge of chaos or the edge of possibility where paradox, uncertainty, ambiguity, flux, emergence and change reside. Further, Goff (1998) maintains that social systems do not follow a prescribed order as they are unpredictable, paradoxical and complex.

The most common image in the chaos theory literature is that of a butterfly flapping its wings which causes disturbance in the upper atmosphere which eventually can impact conditions elsewhere (Daft, 1998; Garmston & Wellman, 1995; Gunter, 1995; Morgan, 1997; Morrison, 1998; Wheatley, 1992). The butterfly does not cause the chaos, rather the insignificant flapping of its wings within a system has a substantial impact on another part of the system, which in turn, affects another part of the system, and eventually moves the system (Morgan, 1997). Further, the impact can be positive or negative depending both on the nature of the intervention and the cultural conditions

Yet behaviour is not random, it just looks that way (Goff, 1998). Behaviours come from external or internal decisions--decisions that lead to patterns. Organizations can be both restructured and recultured to assist in creating positive rather than negative change patterns (Caine & Caine, 1997). Therefore, while we cannot control or totally plan for the change process, we can identify the patterns that emerge and perhaps we can create conditions that foster the necessary adaptability (Garmston & Wellman, 1995). The chaos theory literature, as well as the general change literature, suggests conditions that assist organizations in addressing seemingly chaotic change initiatives. First, perhaps most importantly, organizations need to develop the means of supporting change which is constantly emerging and in flux (Daft, 1998). Secondly, the literature stresses the importance of collaboration and teamwork as the means of operating (Gunter, 1995). The third key condition is shaping the decision-making practices to ensure that those affected by decisions are involved in making the decisions (Garmston & Wellman, 1995; Goff, 1998). Fourthly, organizational structures must be flexible with an emphasis on holistic processes as opposed to isolated tasks (Hammer, 1997; Seller, 1999). Collectively these conditions foster change capacity within a chaotic environment as well as supporting an inter-related web of relationships (Garmston & Wellman, 1995).

Chaos or complexity theory provides a means of retrospectively analysing the processes involved in complex change. Obviously both the organizational structure and the culture impacts on how the change process unfolds and moreover, both the structure and the culture can be impacted through the experienced process. De Geus (1997), through an analysis of companies that have existed for over a hundred years, identified four characteristics of living companies: sensitivity to the environment, cohesion and identity, tolerance and decentralisation, and conservative financing (p. 9). The first three characteristics are relevant to educational organizations as they stress the importance

of continual organizational learning, acceptance of divergent perspectives, incessant adaption to contextual needs, and the means of collaborative interaction. Such attributes are reminiscent of the conditions identified in the chaos literature addressed earlier and all seem related to cultural values. These qualities form the bases of a living or learning organization and Fullan (1999, p. 15-16) suggests:

> The secret to living companies, complex adaptive systems, learning communities or whatever we wish to use, is that they consist of intricate, embedded interaction inside and outside the organization which *converts tacit knowledge to explicit knowledge on an ongoing basis* (italics in original).

A key question remains as to the causal relationship between complex change and the nature of the organization. Does one come first or do they evolve together or both? In this short paper, we have no pretense of answering such complex and fundamentally crucial questions. Yet these questions have haunted our thinking as we have pursued this longitudinal research program. In particular, we remain intrigued with the dialectical relationship between restructuring and reculturing as it pertains to the processes involved in changing or reforming secondary schools. Consequently in this paper, we examine two decisions related to secondary school change to consider the divergent paths and the unexpected cultural adaptations which emerged.

Background

The process reported in this paper began in 1994 when a Canadian school district empowered and required its secondary schools to revise their organizational models away from a traditional subject departmental structure. Contractually, in partnership with the local teacher union affiliate, department heads were replaced by facilitators as the formal Positions of Responsibility (POR)[2]. The

[2] In Ontario legislation, Position of Responsibility is the term used to describe such roles as department head or, in this school district, facilitators.

schools were encouraged to develop site-based models with the caveats that the status quo was not acceptable and that the context-specific models were to be program-based and revised annually.

From the initiation of the restructuring process, there was a recognition of the unique context of each school and schools were not expected to create identical organizational structures. In some school models, some sort of subject connection was retained while in others function positions were created. Function positions focussed on needs the school staffs identified as concerning whole-school, non-subject specific issues. An example of the most common function position was one dedicated to facilitating the use of alternative methods of assessment across the whole school. Generally, schools were moving towards function-based models although they might retain some subject connections. The organizational models were modified annually as school staffs reviewed their model and retained or created new positions. By 1999 no school remained organized nor operated as it had in 1994 and different forms of Positions of Responsibility were created as deemed important by the school staff.

We began working with the Kawartha Pine Ridge District School Board[3] first in a field development capacity, at their request, to report on the findings from our earlier research on the department head role in change. The earlier research, conducted in different sites, assumed that department heads were the natural role though which to facilitate secondary school change. But, based on the data, we eventually concluded that the structure curtailed significant and sustained change (Hannay, 1992; Hannay & Bissegger ,1994; Hannay & Schmalz, 1995). What began as a research dissemination activity in the Kawartha Pine Ridge District School Board became a research

[3] In this paper, we use the existing name of the school district at their request but all identifying characteristics of individuals or schools have been removed.

program as it became clearer that these schools were entering into unfamiliar organizational and process territory.

Both quantitative and qualitative data were collected since 1995. In order to understand the impact of the organizational changes on the whole school, we collected survey data annually from all secondary school teachers (return rate of approximately 90% system-wide). The survey categories were developed through a consensus reaching process with the district Steering Committee, principals, and panels of teachers. Fifty Likert items, measuring six dimensions of school climate, were adapted from previous studies (especially Leithwood & Aitken, 1995; Rosenholtz, 1989).

Additionally, in order to gain a deeper understanding of the effects of the model development process on the operation of the school and the new roles created, we conducted intense annual interviews with individuals in the new POR leadership roles. When appropriate, in order to broaden the research base, we interviewed individuals on the school-based restructuring committees (individually and in focus groups), senior school district administrators, and school principals. In each case, all interviews were audio-taped and transcribed verbatim. Data analysis involved identifying the patterns and the qualitative data analysis program NUD:IST was employed to create data displays for each code and for each school. In this paper, we use qualitative data from all sources and from different periods of the longitudinal study.

Throughout the time period necessary to develop new organizational models and the research program, the school district and schools have encountered significant political shifts. Since 1995, the provincial government changed from socialist to conservative, severe budgetary restraints were imposed with the school district losing the ability for direct taxation, school boards and local teachers' federation affiliates were forcibly amalgamated, school administrators were removed from

being members of the teachers' unions, and teachers were involved in an illegal provincial strike and a legal local work-to-rule campaign. However, both the restructuring and the research program continued within this political context.

Findings

The restructuring process documented in the longitudinal research study did not begin with a grandiose nor a carefully researched strategic plan. Rather similar to many processes in educational and other communities, the process began in response to a real problem that needed to be solved. In this case, it was that the contract agreement concerning allocations of subject department heads was incongruent with provincial curriculum policy. Plans and policies continually evolved since the initial decision to institute organizational restructuring and indeed are still evolving to meet emerging needs. As we have been investigating the process as it has unfolded, we have had the opportunity to examine the emergent process but only recently have we had the luxury of hindsight, based on research data, to holistically examine the restructuring and reculturing process in the participating nine schools. In numerous ways, this longitudinal hindsight has allowed us to identify patterns that emerged from the rather chaotic decision to allow each secondary school to both create and revise their school-based models and as Goff (1998) suggests "order reveals itself in retrospect; it cannot be planned" (p. 33).

Consequently, we identify the patterns that emerged from the initial decisions taken in this restructuring process and through this discussion we also link restructuring to reculturing. We address these issues through broad strokes which diminish the complexity and variety involved if the analysis focussed on individual schools. Yet there are patterns that, in varying degrees, pertain to all sites and it is our intent to focus on the common patterns. We begin the analysis through considering the initial decisions (the butterflies) and then examine the evident reculturing patterns.

The butterflies are arising or the initial process decisions

Through the ongoing data analysis it has become clearer that four early decisions, made by the Steering Committee[4], provided the foundational conditions for the documented development of change capacity. School models were to be both program and context-based, learning organizations require professional learning opportunities, school committees were to design and then annually review their models, and the status quo was not acceptable (Hannay, 2000). The decision that the school organizational structures were to be context-driven meant that each secondary school developed its own model to best support student learning within their context. The decision that learning organizations require professional learning opportunities resulted in a vast array of professional development sessions. In retrospect while all four decisions were important to the documented process, the latter two were pivotal.

School restructuring committees

An initial decision was that school restructuring committees were to be formed in each secondary school with the responsibility of designing an initial organizational model for their school. This committee was to review annually and revise the model, when desirable, as the organizational structure was to be responsive to the contextual needs. Some participants eagerly sought out this form of involvement, for instance:

> It was an excellent opportunity for the staff to play a very vital role in the decision-making process at the school. I personally found that very exciting. [FG96: J][5]

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[4] Comprised of representatives from the school district and the teacher union affiliate.

[5] All data from focus groups are identified by the year the data was collected and the school.

Yet for all individuals, the prospect of designing organizational models for their schools was a daunting task both in terms of the time commitment and the responsibility involved. In the early data collection, this concern was paramount:

> One of the major challenges is that we are still in an old-fashioned model and some staff members still look at the old model . . . and they want to make the changes but they are not willing to let go. Sometimes it's harder with the staff doing it to each other rather than it coming from above saying, 'this is what you will do' and they can bitch and complain, but there is no one to personally blame. [FG96: E]

Not only were the participants on restructuring committees required to question the structure and think differently about the operations of their schools, they had to work differently than they had in past experience:

> Collaboration is such a drastic change for us though, you come to this building, you talk to people and maybe even talk about course material, but then you think 'he's kind of stupid and that's kind of dumb'. Then you go into your room and close the door and forget it. We no longer can do that and if you have a difference with someone you can't just walk away . . . now you have to deal with it and that's a huge change. [FG96: J]

The annual review and possible revision of the site-based structures lead to the concept that organizational structures were flexible and could be revised as necessary, but perhaps more importantly, it enhanced change capacity through an acceptance of continual change. As a facilitator suggested in the third year of implementation:

> I think the staff likes the idea of being involved in creating positions, and I think they like the idea of. . . at the end of two years, saying, "Okay, that facilitator's position has met its mandate and I don't think we need to go on anymore." Or, "I think that that position should continue," and the staff gives input into that. Or, "I think we need to continue the position, but with somebody else." So, I think they see a lot of flexibility with it, so I think they like that. [Int98: B4][6]

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[6] In the quotes from individual interviews, each verbatim quote has been coded to represent the year the data were collected (Int95 indicates 1995) the school (by an alphabetical letter), and by a number for an individual.

The initial decision to establish school restructuring committees meant that principals were neither given the primary responsibility of creating the new models nor were they even required to be members of the committees. Yet principals played a key role in the restructuring and reculturing process. In some instances, the principal opted to be closely connected with rethinking the organizational structure of the school. In these schools, the principals' transformational roles aided in restructuring but more importantly in the reculturing that occurred. As early as the end of the first year of implementation, there was indication that leadership patterns were becoming more flat-lined:

> Decision-making is becoming more horizontal rather than vertical. Willingly or maybe even unwillingly, the traditional power structure is changing and I see that being the result of two things: I think [the principal] is aware of how decisions are made and I think he/she is trying consciously working to make those changes; and I think the work of the [new facilitators]. [Int97: A7]

In others school contexts, the principal hampered and initially prevented the restructuring process from proceeding, for example:

> . . . he/she is not supportive of what we are trying to do or have done. This leaves this entire committee feeling like they have no legs left. . . . I don't see that this committee has anything further to do in this school at this time. [FG96: I]

However in the second and third year of the restructuring process, several principals retired and the new administrators began engaging their school staffs in both restructuring and in school-based decision-making. A participant described the contextual impact:

> [The principal] used to thunder up and down the halls terrifying everybody, and there were some people who thought oh that's great, this is where we are. So, I think as a staff, when he/she retired, we had a lot of growing to do because people were used to being told exactly what to do, what to think, and it was a major change. Then suddenly saying, "Well, gee, we're actually being given some say in what happens here." [Int98: F7]

As will be explored later in this paper, the decision to involve staff members in originally designing and then annually revising the site-based models set the conditions for the emergence of collaborative interaction, teacher leadership, and empowerment as well as supporting the concept of change as an on-going process. As such, these conditions assisted the participants in addressing their unpredictable change environment.

The status quo is not acceptable

Another original decision in this restructuring process resulted in the mantra, 'the status quo is not acceptable.' The Steering Committee did not have a pre-determined model in mind for each secondary school as they charged the school-based restructuring committees with the responsibility of creating models that differed from the status-quo subject-departmental organizational model. This decision created tension as participants had to question their tacit knowledge and experiences of organizational structures because "It forced each person to rethink their own philosophy and what really is best for students" [FG96: J].

Some school staffs quickly initiated function or process POR positions to replace the subject department head positions. In the first evolution of the new models implemented in 1995, the early modifications were noted by a facilitator: "The new positions we have created, they span over the whole school, every department, and every subject area" [Int95: J1]. As the process continued, the number and scope of the function positions increased in all schools and the nature of these positions represented a more heterogeneous organization as opposed to the past homogeneous subject-departmental models (Hannay, 2000).

Conceptualizing such new structures required that school staffs deliberate as to what was important for their school which eventually led to goal-driven organizational structures. By the third

year of the restructuring process, the majority of school staffs selected the key goals for their schools and then adapted their organizational models to reflect these goals. Whole-school goals became a serious activity, not one undertaken to meet an administrative requirement as explained by a participant:

> Three years ago we tried to focus on meaningful, significant and attainable school goals. And limited school goals so that they were attainable. We tied our POR positions to the school goals. Each year as we revisit them, we look at the school goal and we look at the goals and we look at the position. It's the first time in my career that I've ever remembered what our goals are. . . . I understand why we're doing them and it's not just 12 pages of gobbledegook . . . I see that as something that maybe people are starting to appreciate a little bit more, why we have the goals and how they're linked to the positions. [Int99: G5]

This meant that school needs, not past practice, determined the organizational structure of the schools and that often the new positions represented whole-school processes as opposed to administrative tasks typically associated with the past department head positions. For example, a participant described the emerging relationship:

> If assessment and evaluation is one of our goals, then guess what, there's going to be somebody that coordinates that and makes sure that it happens. If teacher mentoring is one of our goals, to get that on line then there's going to be time set aside so that somebody can look after that. [Int98: E10]

The decision that the status quo was not acceptable required that the school staffs question what was most important in their contexts and then realign the resources associated with the Positions of Responsibly to those needs. This introspection supported shared decision-making, an acceptance of the responsibility for taking action, and organizational transparency.

Together the fluttering of two butterflies that emerged from the decisions involved in the contract negotiations influenced the cultures of the school and school district. Certainly we have argued in previous accounts that the restructuring preceded.reculturing (Hannay & Ross, 1997;

1999) because in secondary schools it might be necessary to challenge the traditional homogenous structure in order to uncover tacit knowledge. Without this questioning, it might be difficult for reculturing to occur. As noted in the following section, the evidence clearly suggests the need to develop new structures provided the context through which new cultural attributes could be initiated and nurtured. The fluttering of the butterfly wings affected both how the schools operated and how individuals interacted professionally.

Reculturing Patterns

The four initial decisions set the scene for reculturing but without a strategic plan; nor did the process unfold in a planned change manner. Each secondary school staff experienced the process differently within their own time frames and contexts but the longitudinal evidence indicates that they have created similar reculturing patterns directly related to the initial decisions. For example, the staffs of Schools A and J moved quickly to substantially revise their organizational models although there is some indication that School J might be retreating from its initial changes. The staffs of Schools B, C and E were initially resistant to the organizational changes but the data from year four suggests the schools were surging ahead with structural changes which spawned cultural change. Schools F, G, H and I were all indicating some degree of organizational and cultural changes by years four and five although the degree of these changes were more limited especially in Schools G and H. As noted earlier, new administrators were directly linked to these changes as these principals were more apt to engage the staffs in restructuring though shared decision-making.

The butterflies that emerged in the early 1990s and initiated the restructuring, created patterns that represent a pathway through which restructuring perpetuated reculturing. This is not to suggest that there is a direct causal and linear relationship or that these patterns provide a recipe for

reforming secondary schools. Yet the patterns are apparent and there is even some sense that the staffs in Schools A and J developed these reculturing aspects before those in Schools B, C and E which developed these aspects before Schools F, G, H and I. At this point in the ongoing process, the reculturing patterns can be linked into two interactive clusters: reconceptions of the nature of an organization, and roles and relationships. The nature of an organizational cluster consists of the organization being goal-driven, focussed on whole-school, flexible and emergent, individual acceptance of the responsibility for action, and transparent. The roles and relationship cluster is comprised of several individual patterns: shared decision-making, teacher leadership and empowerment, collaborative interaction, and dialogue as a means of addressing cognitive dissonance. While these clusters are inter-connected, as illustrated below in Figure One, each is addressed separately.

Figure One: Reculturing

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Reconceptualizing the nature of an organization

Early in this research study it was clear that the foundational element in the restructuring process (Hannay & Ross, 1997) was the new site-based models-- not due to the models created but because of the process of engaging teachers in developing the models in the school. As a participant reflected:

> Changing titles and names is meaningless. And that's why all of that other part is so critical, the entire process that you put staff through. The model is meaningless. The titles are meaningless. That's a hard thing for people to accept who have been in traditional schools. [Int98: J13]

Over time, this involvement has created new conceptions pertaining to the nature of an organization including goal-driven, whole school, flexible and emergent, responsibility for action, and transparency. Certainly as noted earlier in this paper, the school structural organizations became goal-driven. As explained by a participant, this eventually linked the creation of goal-driven organizations to opportunities for growth, participation and school culture:

> You do have a chance to say something and you do have a chance to be heard. You do have a chance for input and you do have a chance for growth. I think that's the culture of change that we're feeling that yeah, we have input. Again, because it's all goal driven, we're all singing out of the same hymn book. I think that makes a big difference. But they can find that little niche in there. . . . I think that's probably the biggest thing about the school culture is a sense that you can have input, that you can create your own empire, that you're not in a school with a great big science department, a big math department, and you're a little wheel. [Int99: E14]

Further as also discussed earlier in this paper, organizations were perceived as needing to be flexible to respond to emerging needs:

> I think that the model has to be constantly in flux. I do think that was the original intention of it--that it was never just to be created and sit there for 20 years. So if I can emphasize anything, keep it fluid, keep it moving and keep moving people through those positions. When I took the position I knew it wasn't forever. I knew it was part of an ongoing process. [Int98: A6]

The adoption of function positions reflected a concern with whole-school or heterogenous structures.

> I think to break down the barriers between individual subjects, and get the staff working as one as opposed to individual little groups of people that want to do their own thing and protect their territory. [Int98: I6]

Assuming the responsibility for structural evolution was fostering a sense of ownership--ownership in creating new directions and new opportunities. The process not only provided opportunity and gave teachers voice, it required that individuals accepted the responsibility of involvement:

> I think this whole process has really encouraged people to take ownership. If you don't like something, ask the question. If you don't like something, then suggest a way to change it. If you don't like something, at least, bring the issue out on the table so that you can find out how widespread that feeling is. [Int97: P8][7]

Additionally, the data has continually stressed the importance ascribed by the participants to openness, communication, and dialogue. Many participants repeatedly commented that they wanted to create open structures that operated differently than had the previous department head organizational structure. Transparency of process was a subtle reculturing pattern associated with the restructuring process. A facilitator suggested that the process had to be transparent with "opening it all up to the staff and no secrets" [Int98: B2]. Another facilitator described how participating in the restructuring process was supporting organizational transparency:

> It was kind of like we lived in a fountain here. You went to the fountain and you threw in your coins and you hoped to God you got your wish, right. You'd keep throwing in the coins until somebody said, 'There's no more money there', 'Or no more wishes.' Now, we have a budget. We know what's what and where everything's going. [Int98: B4]

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[7] To facilitate confidentiality, we oped to code the 1997 interviews with principals without reference to their schools.

In summary, many of the conditions identified earlier in the conceptual framework from the chaos literature were evident in the data concerning reconceptualizing the nature of an organization cluster. Certainly, the data indicates that the school staffs were beginning to think about their organizations as flexible and emergent (Daft, 1998) and that the restructuring process was assisting the participants in developing the means of supporting change (Garmston & Wellman, 1995). As well, conceptualizing secondary school organizations as those that focus on heterogeneous whole-school issues (Hannay, 2000) as opposed to homogeneous subjects as the primary organizational image, suggests that these schools are considering holistic processes as opposed to isolated tasks (Hammer, 1997; Seller, 1999). A participant reflected that rethinking the nature of their organizations has supported a broader comfort with change:

> I think the actual alternation to the structure, creating formal positions. That was a change I think that has set a certain precedent and when changes do occur we have the capacity to adjust to them in a formal way. I think that can take a lot of the pressure and anxiety off of people. Purposing changes and listening, developing models and getting input is, has been really sound and overall I think for the majority of staff that it's worked really, really well for them. [Int98: A5]

Roles and relationship cluster

The importance of shared decision-making was apparent in our first round of data collection in 1995 as it was a prime reason for the evident differences in the schools. For example, in schools where the staffs were resisting the restructuring process, there was evidence that the schools lacked a history of shared decision-making:

> I think the morale of the staff would be a lot higher if they felt that they had a lot more input and if their input was listened to and respected, at the moment I don't think they feel that way. Hopefully that will change. [Int95: C1]

> I would say they [department heads] input but have been told time and time again that the final decision will be made from the administration. [Int95: G3]

In contrast, in the two schools that moved very quickly to reconsider their school organizational structure, shared decision-making was evident earlier in the study. Indeed, a participant made the vital connection between those individuals affected by the decision having a role in making that decision:

> We've all had input into it at staff meetings. I like that it isn't a decision from the top that it seems to be a decision that's made in the ranks, the people who are actually doing the work are making the decisions in the direction that you're going. If you can't share in that process then you can't take ownership with the decisions so you're not going to make any changes. If the changes are forced upon rather than you having some choice in the matter it's not going to happen, so I like that. [Int95: J3]

In our most recent data collection in 1999, this was still a key cultural element attributed to the restructuring process but the relationship between decision-making, teacher leadership and empowerment was more overt. By the fourth year of implementation, new connections were being shaped in the schools between those in formal leadership roles such as school administrators and Positions of Responsibility. As well, staff members had an informal role in decision-making. These relationships resulted in the gradual establishment of teacher leadership with an acceptance of a decision-making role and of responsibility for action. As a principal suggested "I think there are more teaching staff involved in shaping and initiating school change" [Int97: P1] and another principal stated "there are more partners now in the decision-making than there had been in the past" [Int97: P2]. This has resulted in "more sharing in who has power and what's going on in the school [Int98: E13] which, according to an administrator, resulted in "a lot more of buying in of everybody, in terms of having a say and really taking ownership for how things are done here" [Int97: P8]. For some schools, such new relationships not only changed the power balance but supported new ways of interaction and new structures. A participant described the impact on school operations:

> I think part of what I like is that it seems as if we're self governing almost. Things are run now by committees. It's not so much everything run by the department heads. Everybody is part of a committee, part of something that's going forward. One of the things that the restructuring did was to determine, not just facilitators, but also people who were like a coordinator of a committee like assessment and evaluation or the TAG groups or those kinds of things. And everybody has to affiliate themselves with one of those committees. Well you feel like you've got a position in the school where you're actually maybe making a difference. [Int99: E11]

The increased involvement in decision-making and teacher leadership contributed to a growing sense of empowerment but also the participants reported that they learned the importance of both accepting a divergence of perspectives and facilitating dialogue as a means of constructively addressing differences. A participant suggested early in the restructuring process:

> I think you should be able to agree to disagree, to have that kind of healthy dialogue, and hear other people's points of views that maybe you never thought of or ever considered. I think that's really healthy. That's how we grow and we learn. [Int98: J2]

By 1999, the importance of dialogue was emphasized even more. As noted by another facilitator:

> Any time that you have a group of teachers together talking about those kinds of issues rather than simple management issues--management or discipline issues [such as] are students wearing hats or are they not wearing hats or whatever. I think any time you have those kinds of opportunities for people to come together and they're really actively engaging in those conversations and really getting into some very candid sharing of philosophies, you can feel the positive impact in terms of the environment of the school. You're focussed then on what's happening in the classroom. And all this other is in your changing positions to impact on what people are doing in the classroom. So to me, it's not what model should we have, like the tail wagging the dog. It's what do we need here for kids, for teachers? Because we have a good school. How can we continue to keep it a good school? How can we continue to ensure that students are getting what they need to be successful? Then working from that point of view. So what positions they come up with, I think, is very much secondary to that dialogue. [Int99: I7]

The reculturing patterns that we have loosely grouped into the roles and relationship cluster indicate the emerging cultures in most of the schools. Certainly, the literature emanating from the study of chaos theory emphasizes the importance of collaboration, teamwork, and shared decision-

making as a means of operating (Daft, 1998; Garmston & Wellman, 1995; Goff, 1998). Working together to make decisions about what was of worth to the individual schools through creating the organizational models contributed to the development of the conditions supportive of reculturing.

Conclusion

The restructuring and reculturing processes addressed in this paper are complex and even context-bound change efforts. There was no grand plan when the process began, just a commitment to the best ways of supporting teaching and learning and a trust that the school restructuring teams would create the best possible organizational structures for their schools. There was even a hint that the whole process would take one or two years as it merely involved changing structures! Yet the past structures were deeply embedded in the secondary school cultures and it quickly became apparent that the restructuring both fostered and required reculturing (Hannay & Ross, 1997).

The chaos theory literature assists retrospectively in understanding the process documented. The two initial decisions, examined in this paper, necessitated that the school teams work differently and this in turn facilitated the conditions which fostered both change capacity and reculturing. The conditions most pertinent in understanding the process included supporting constantly evolving and emerging organizational values, involving stakeholders in making the decisions in a collaborative manner, and rethinking the functions of the organizations more in terms of processes as opposed to isolated tasks. These conditions are not only reminiscent of the conditions included in many accounts of chaos theory, as described earlier in the conceptual framework, but also reflect the attributes that de Geus (1997) associates with a living organization. Living organizations in an educational environment, as noted earlier, stress the importance of continual organizational learning, acceptance of divergent perspectives, incessant adaption to contextual needs, and the means of collaborative

interaction. The data from this longitudinal study certainly documents that components of these elements emerged over the last four years, especially in the 1998 and 1999 data. Through the restructuring process, the participants gradually exposed their tacit knowledge about 'how we do things around here' for questioning. By exposing this tacit knowledge to questioning, essentially they developed explicit knowledge about the ways of operating in their schools which influenced the school cultures.

Yet a living organization cannot be created in a mere four years and it remains to be seen if these schools and this school district can sustain such cultural changes especially in a difficult political context. New butterflies are rising in this school district and across Ontario and their impact on the restructuring and reculturing process is yet to be determined. Certainly, the forced amalgamations of the school districts and consequently the respective teacher union affiliates are resulting in some modifications to the initial decisions. The doubling in size of the school district and the consequent demands on the system, virtually overnight, is affecting the personal interactions between system administrators and school staffs. Further, there is some movement towards a common contract definition of the role of the positions of responsibility which decreases the ability of the school teams to design their own models which in turn moves the decision-making away from the school context. There is also some tendency in wanting to return to a subject-based model to keep aligned with provincial union policy and the nature of the provincial secondary school mandates. As we continue to study these schools and the school district, we will consider how the movement of such butterflies influences the conditions and the cultures of these sites, and will also be able, again retrospectively, to consider whether the living organization grows or moves into a state of hibernation.

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